

PROCEEDINGS
OF THE
ROYAL PHYSICAL SOCIETY.

ONE HUNDRED AND SIXTH SESSION, 1876-77.

Wednesday, 15th November 1876.—Dr JOHN ALEXANDER SMITH, President, in the Chair.

James Bryce, Esq., LL.D., F.G.S., etc., 18 Morningside Place, was elected a Resident Member.

The following Donations to the Library were received, and thanks voted to the Donors:

1. Proceedings of the Royal Society [of London], Vol. XXIV., Nos. 166, 167.—From the Society. 2. Journal of the Linnean Society, (Botany) Vol. XV., No. 82; (Zoology) Vol. XII., Nos. 60-62.—From the Society. 3. Transactions of the Royal Scottish Society of Arts, Vol. IX., Part 3.—From the Society. 4. Proceedings of the Literary and Philosophical Society of Manchester, Vol. XIV., Nos. 11-13.—From the Society. 5. The Medical Examiner, Vol. I., Nos. 7-10.

I. Dr J. A. SMITH, the retiring President, then delivered the following opening address:—

GENTLEMEN,—In meeting here to open this new session of the Royal Physical Society, the first thing that strikes us all is, that our well-known and highly-valued Secretary, Dr Robert Brown, is not present this evening to welcome us, and, as usual, conduct the preliminary part of our business. I am glad to say that it is not from ill health or any such evil cause that we have not his well-known presence with us, but that he has thought proper to migrate to the great metropolis, where he thinks and feels he will have more scope for his talents and acquirements. I am sure we wish him all success in his new sphere of life, and in the literary labours

to which he is now devoting himself. We shall not soon forget the debt of gratitude the Society owes to him for the care and attention he has given to its business, and for the valuable communications he has made to us from time to time.

I have now to refer to another loss the Society has recently suffered, in the removal from among us of one well known to us all—at least, to the older Members of the Society—whose pleasant face we shall see here no more. I refer to Thomas Strethill Wright, M.D., who died, after a long illness, on the 13th day of October last. Dr Wright was an old Member of the Society, having been elected in January 1851. He was also one of the Presidents from November 1858 to November 1861, when he delivered an opening address, the science, the poetry, and the beauty of which were all alike remarkable.

The delicate state of Dr Wright's health in later years prevented him from coming often to the meetings of the Society; but we shall long miss him, as one of our leading scientific naturalists, specially great in his own departments of the *Protozoa* and the *Cœlenterata*. Personally I mourn for him as a long-known and talented man, and a highly-valued, warm-hearted friend. I have thought it right—to give you some idea of the amount of work done by the late Dr Wright in his active days in our Society—to make out a list of the communications he brought before us. I shall not refer here to his valuable observations on Electricity, and to the important papers brought by him before the Royal Scottish Society of Arts, and other scientific societies, nor to his more recent astronomical studies, which, while they expanded his ideas and knowledge of the heavenly bodies, at the same time deeply touched his heart, he told me, at the greatness and glory of the Almighty Creator of them all.

I shall simply confine myself to the communications he has made to our Society. It will at least let some of our younger Members see the kind of work done in this Society in by-past years. These communications are upwards of fifty in number, and all the results of his original observations. They are published in our *Proceedings*, and time

will not permit me to go into details. I merely mention the titles of some of them, with the dates when he brought them before the Society :—

February 28, 1856.—I. On the Reproduction of *Cydidippe pomiformis*. II. On two new *Actinias* from Arran (with plate).

March 26, 1856.—On Gemmiparous Reproduction (multiplication) in *Actinia dianthus* (living specimens were exhibited).

April 23, 1856.—I. Description of two Tubicolar Animals (with plate)—*Phoronis hippocrepia*, *Phoronis ovalis*, n. gen. and sps. II. Note on Indications of the Existence of Bilateral Symmetry, and of a Longitudinal Axis in *Actinia*, as shown in living specimens. III. Specimens of living Madreporæ (*Caryophyllia Smithii*) from Ilfracombe, Devonshire, were exhibited. IV. On the Existence of Thread-Cells in the Tentacles of *Cydidippe*.

November 26, 1856.—On *Hydractinia echinata* (2 plates).

January 28, 1857.—I. Observations on British Zoophytes—*Clava* and *Eudendrium* (2 plates). II. On the Prehensile Apparatus of *Spio seticornis* (plate).

March 25, 1857.—I. Observations on British Zoophytes : (1.) *Laomedea acuminata* ; (2.) *Trichydra pudica* ; (3.) *Tubularia indivisa* (3 plates). II. Description of New Protozoa : (1.) *Lagotia viridis*, n. gen. and sp.; (2.) *Vaginicola valvata*, n. gen. and sp. (2 plates).

April 22, 1857.—Observations on British Zoophytes : (1.) *Coryne gravata*, n. sp.; (2.) *Stauridia producta*, n. sp. (plate).

November 25, 1857.—I. On Reproduction by Ova from the Medusoid of *Campanularia Johnstoni*. II. On *Epehelota coronata*, a new protozoan Animalcule. Dr Wright also exhibited specimens of the new *Laomedea acuminata* (Alder) with its Medusoids.

March 24, 1858.—On Monœcious Reproduction in *Tubularia larynx*. Dr Wright exhibited a specimen of the *Hydra tuba* (Dalyell) throwing off Medusæ ; and also the *Myrothela arctica*, Sars.

April 28, 1858.—Observations on British Zoophytes : (1.) On *Atractylis* (n. gen.); (2.) On the fixed Medusoids of *Laomedea dichotoma* (living specimens exhibited); (3.) On the Reproductive Organs of the Medusoid *Laomedea geniculata* ; (4.) On the Reproductive Organs of *Laomedea lacerata* (2 plates).

November 24, 1858.—I. On new Protozoa : (1.) *Lagotia producta* ; (2.) *Zooteirea religata* ; (3.) *Corethria sertularia* ; (4.) *Stentor Mülleri*, *Stentor castaneus* (plate). II. Observations on British Zoophytes : (1.) On the Reproduction of *Turris neglecta* ; (2.) On the Development of *Hippocrene Britannica* (?) from *Atractylis ramosa* ; (3.) On the Development of *Hydra tuba* from *Chrysaora* (plate).

December 22, 1858.—On the *Cnidæ* or Thread-cells of the *Eolidæ*.

January 26, 1859.—Observations on British Zoophytes : (1.) *Coryne implexa* ; (2.) *Coryne* (*Margarica*, St. Wright) *implexa* ; (3.) *Bimeria vestita* ; (4.) *Garveia nutans* (2 plates).

February 23, 1859.—On *Goodsirea mirabilis*, an undescribed Gymnophthalmous Medusa. Dr Wright also exhibited specimens of *Gromia oviformis*.

March 23, 1859.—Observations on British Zoophytes: *Kionistes retiformis* (with figures).

April 27, 1859.—On a Method of Constructing Polarising Prisms of Nitrate of Potash.

January 25, 1860.—Note on an instantaneous method of finding Microscopic Objects under High Powers.

May 9, 1860.—Observations on British Zoophytes: *Halcampa fultoni*, a parasitic *Actinia* (two figures).

November 28, 1860.—Observations on British Zoophytes and Protozoa: (1.) Notice of *Ophryodendron abictina* (*Corcthrina sertularia*); (2.) On the Reproductive System of *Chrysaora* (plate).

February 27, 1861.—Observations on British Zoophytes and Protozoa: (1.) *Atractylis palliata*, n. sp. (plate); (2.) *Atractylis coccinia*, n. sp.; (3.) On Rhizopod Structure.

April 24, 1861.—Observations on British Zoophytes and Protozoa: (1.) On the Reproductive Elements of the *Rhizopoda* (plate); (2.) On the Reproduction of *Ophryodendron*; (3.) On *Dendrophyra radiata* and *D. erecta* (n. gen. and sp.); (4.) On *Lecythia elegans* (n. gen. and sp.). Appendix to *Cionistes reticularis* (*Kionistes retiformis*), with figure. Appendix to *Hydractinia*.

November 27, 1861.—I. President's Opening Address. II. On Reproduction in *Æquoria vitrina* (plate).

February 26, 1862.—Observations on British Zoophytes: (1.) *Atractylis arcuosa*; (2.) *Atractylis miniata*; (3.) *Laomedea decipiens* (with plate).

March 26, 1862.—Observations on British Zoophytes and Protozoa: (1.) *Clava nodosa*, n. sp.; (2.) *Acharadria larynx*; (3.) *Zooteirea religata*, n. sp. (4.) *Freya* (*Lagotia*) *obstetrica*; (5.) *Freya styliifer*; (6.) *Chaetospira maritima*; (7.) *Oxytricha longicaudata* (3 plates).

May 7, 1862.—I. On the Pigmental System of the Æquoreal Pipe-fish (*Sygnathus æquorius*). II. Observations on British Zoophytes: (1.) *Vorticlara proteus*; (2.) *Trichydra pudica*; (3.) On the Development of *Pycnogon* Larvæ within the Polypes of *Hydractinia echinata* (2 plates).

February 26, 1863.—Observations on British Zoophytes: (1.) On a supplementary Canal System in *Stomobrachium octocostatum* (with plate); (2.) On *Acanthobrachia inconspicua*, n. gen. and sp.; (3.) *Atractylis bitentaculata*, n. gen. and sp.; (4.) *Atractylis quadritentaculata*, n. sp.; (5.) *Coryne ferox*, n. sp.

January 27, 1864.—Remarks on Dr Stevenson Macadam's "Spheroidal Theory" of the Interior of the Earth.

March 23, 1864.—Observations on British Zoophytes and Protozoa: (1.) On the Structure and Reproduction of *Bodieria Turneri*, a new Rhizopod (plate). (2.) On the Prehensile Apparatus and Sting-cells of *Cydippe*; (3.) On the Stem-Canals of *Tubularia indivisa*.

February 22, 1865.—On the Natural History of *Euglena*.

November 27, 1867.—Opening Address : a general view of the *Infusoria* and *Rhizopoda*. (Beautiful drawings, after nature, engraved by Dr Wright on the glass slides, were exhibited by aid of the lime-light and lantern).

November 25, 1868.—An Opening Address, with numerous illustrations of the Lower Forms of Animal Life. In continuation of the Opening Address of the previous year (illustrated by beautifully-detailed drawings by Dr Wright on the slides of lantern, shown by the oxy-hydrogen light).

These numerous papers show that good work was done in those days in our Society by Dr Wright. His powers of observation were great, and great also was the care and skill with which in his various small aquaria he watched the development and progress from youth to age of many of these marvellously beautiful, though minute denizens of the great sea. The ease also with which he could bring them under the examination of his powerful microscopes, and describe what was to be seen, was to me always a matter of astonishment and admiration, as was also the skilful way in which, with some simple broken needles fixed in pens or pencils, or other like tools of his own manufacture, he could engrave delicately on the lithographic stone the beautiful and most correct figures of these various wondrous creatures of such marvellous beauty, and thus prepare the plates to be printed for our *Proceedings*. The naturalist and the artist being one person gave a correctness and beauty to the figures which would otherwise have been quite unattainable. I may truly say, Gentlemen, in regard to Dr Wright, that I fear we shall not soon look upon his like again.

The Society has also to mourn the death of another member, who has been taken from us in his early manhood—Mr Andrew Smith Melville, Lecturer on Botany, Geology, etc., to the Watt Institution, and also to the Royal High School. He was the son of an old Member of the Society—Professor Melville, of Galway University. Mr Melville was apparently entering on a long course of usefulness and promise. I presume, however, from the abundance of his public labours, he had but little leisure to favour us with many communications at our meetings.

Another respected member—Mr George Meldrum, C.A.—has also, more recently, been removed from us by death. He was a good man, and well known in Edinburgh. As a lover of science, however, he was one who took the part of an interested listener more than a sharer in the public business of our ordinary meetings. I long had the pleasure of his acquaintance, and I know that both in his private and public position in the church and in the community he leaves a sad blank.

The mention of these recent losses makes me naturally turn my thoughts back to the many eminent men who have filled this presidential chair, and who have now passed away from us. Happily, some distinguished men still remain—of whom we are justly proud—to cheer and encourage us as a society, by their occasional presence with us; taking part in our meetings, and giving us the advantage of their age and experience, and drawing for us on their large stores of knowledge in the varied and extensive fields of Natural Science. I cannot, however, help recalling some of the many great men who stood as towers of strength around this Society when I first entered it, some six-and-twenty years ago. The Secretary at that time was the generous and amiable William Oliphant, the publisher; who was then succeeded by C. Wyville Thomson, now our distinguished Professor of Natural History in the University; we rejoice in his recent success, and trust he may be long spared to add to our knowledge of Nature and her laws, and to enjoy the honours he has so happily and justly won. Sir C. Wyville Thomson, having held the office of Secretary for a couple of years, was then succeeded by myself, and the office remained in my hands for twenty-one years; but I shall not go into any detailed account of the varying circumstances of the Society during that long period. I am glad, however, to have been able to edit and put on permanent record some at least of the work done in part of that time, in the three goodly octavo volumes of the printed *Proceedings* of the Society, which include many papers of both interest and value, and many illustrations of great beauty, especially, let me say, the series of papers with their illustrative drawings, by the late Dr T. Strethill Wright. The *Proceedings* were a

credit to the Society, and we only regretted that the limited funds at our disposal obliged us at that time to bring them to a close. The Society, I have said, was poor in money, in those days, but it was then rich in men—men whose names will be long remembered and referred to by all cultivators of the Natural Sciences. At the time of my admission, I looked up with much respect to the learned Presidents of the Society—Robert K. Greville, LL.D., the accomplished botanist, conchologist, and artist, and the pleasant, polished gentleman; Professor John Goodsir, the careful, learned, and philosophical anatomist; Dr John Coldstream, zoologist, ethnologist, and kind-hearted, philanthropic man, whose richly-illustrated lectures on Ethnology many will remember with pleasure—each and all of them high authorities in various branches of Natural Science. In the Council at that time were the previous President, John Fleming, D.D., Professor of Natural Science in the New College, a genial, cheerful, original, and many-sided man, full of knowledge on every branch of Natural History—the well-known author of the excellent “British Animals” (an early favourite of mine) and the “Philosophy of Zoology,” somewhat different in its tone, perhaps, from some of our later treatises on similar subjects, and more in accordance, in some respects, with the religious feelings and instincts of, at least, our Scottish people; Hugh Miller, the wonder-working geologist, historian, and poet of the “Old Red Sandstone,” and many more works besides; Alexander Bryson, the geologist, the mineralogist, the ingenious mechanician, the social, warm-hearted friend, and the fearless searcher after truth, giving and taking hearty blows on its behalf, with the joy of a strong man rejoicing in his strength; Robert Chambers, LL.D., who to varied stores of antiquarian lore added a knowledge and a love for geology, in relation to which he published various works, and also of zoology, his keen, inquiring mind making him especially take an interest in the older and somewhat fanciful theories and hypotheses of Oken and Lamarck, and at last in what its Author thought fit at that day to designate as the “Vestiges of the Natural History of Creation.” Subjects of that debatable kind, I may, however,

say, never came up for discussion at our pleasant little meetings, where facts, and not fancies, more usefully occupied our time. The potent literary authority, Charles Maclaren, of the *Scotsman* newspaper, classical antiquary and geologist, was also added to our list of office-bearers; and James Wilson of Woodville, brother of the professor, a pleasant man and writer alike on science and on sport; also Alexander Rose, the quiet, unobtrusive, but learned mineralogist and practical geologist, who for many long years taught these sciences in his well-known corner tenement, close by the University, where he had for pupils many men who afterwards became famous as geologists, mineralogists, and engineers.

These have all passed away, but their services to science and to humanity still abide.

Among the living who did good service to us in by-past years, or who stood in relation more or less close to "The Physical," I shall only name as old Presidents and other office-bearers, Andrew Murray, a distinguished naturalist, and author of several works in various branches, especially in Entomology; Dr W. H. Lowe, an entomologist—both now living in the neighbourhood of London; Dr J. H. Balfour, our well-known Professor of Botany; Dr M. Forster Heddle, Professor of Chemistry, University of St Andrews; Dr Cleland, Professor of Anatomy, Queen's College, Galway; David Page, LL.D., Professor of Geology in the College of Science at Newcastle-upon-Tyne, in connection with Durham University; and Professor Turner, the accomplished anatomist, of our own University. There are many other names I could mention, of men who have done good work with us, but I have confined myself principally to some of the old office-bearers of the Society, who have now mostly left us.

Looking back, then, on the men and the work done by this Society for a series of years past, it has been almost entirely one of observing and recording facts, and describing structure, and exhibiting, with accompanying notes of more or less interest, objects of rarity and specimens in all the various departments of Natural History. With the occasional exception, perhaps, of a passing reference in the opening addresses of some of our later Presidents, I may almost

quote, as still true of the business at our meetings, the words of Dr T. Strethill Wright, in his remarkable opening address, to which I have already referred. Dr Wright says: "We are men of work, not of talk. We have given forth no voice on the grand hypothetical questions which are now troubling the Commonwealth of Natural Science. We have been singularly apathetic as to whether or no the stock of our first parent struggled upwards through innumerable adversities, from a monad to a man. I fear, indeed, that we are a prejudiced people, and would rather leave the question as we found it settled many a year ago at our mother's knee."

Since the day when these wise words were spoken there has, however, been a wonderful development of these theories and hypotheses to which Dr Wright referred. Works, filled with much curious and valuable information, but associated, at the same time, with some of the most startling hypotheses, have been published from time to time in England, and have gone through many editions. I allude, of course, specially to works on the principles of biology, as it is called, and on such subjects as the Origin of Species, the Descent of Man, the Variations of Plants and Animals under domestication, Man's place in Nature, etc., etc. Some of these works have been hailed by great naturalists as introducing a new era of progress and expanded thought, in connection with the investigation of the history of the vegetable and animal kingdoms. Indeed, of late years we have had all these new views and principles propounded by some of their most distinguished supporters, who have occasionally occupied academic chairs; so that they have in this way been very forcibly brought to our very doors. I therefore feel somewhat constrained to take at least a passing notice of them now; to try and see to what they are endeavouring to lead us, as the natural result and outcome of all their teaching, which, I regret to say, seems to me to be something very different indeed from what, in our younger days, we would have thought likely to have met with any favour, at least in Scotland. I have no need, however, now to attempt to show where these theories lead, for they have been more

recently taken up by learned Germans and others on the Continent, and carried forward by them to what appears to be their legitimate outcome and conclusion; as in recently published works on the history of creation, or the development of the earth and its inhabitants by the action of natural causes—in short, a non-miraculous history of creation. Here we learn of the probable eternity of matter—plastic matter, I should say—evolving forces, starting thus into life, and going on to self-evolve and develop all creatures, vegetable and animal alike—running thus upwards in various ascending lines of development (I should say, by a series of miracles), to form all the so-called species, genera, orders, families, and classes of animated nature. Everywhere, however, among these newly-formed creatures, from their very abundance, we are told there is over-crowding, there is not room for all, the strong choke out the weak, and then many of these stronger ones, not content with more room, struggle and strive by natural selection, as it is termed, and otherwise, after something unknown, but different from what they are, to which they are impelled by some force or other. Thus stretching and straining after some unknown capacities, and powers, and structures, these, somehow or other, become evolved within them, and their life thus progresses to higher and still higher forms, until one line of development, more fortunate in some of its circumstances than all the others, culminates in rational man. The links between the irrational brute and him—(the ape, being not his father, but his great-great-great-grandfather perhaps;) these links, like many other much-wanted intervening and connecting links in the many-evolving chains of both vegetable and animal life—have unfortunately not been as yet discovered, though doubtless they must have existed, if the theory be true. A wondrous parentage, truly, requiring, it seems to me, a still more wondrous faith in these modern interpreters of Nature, and of Nature's laws! Here, then, we seem to find ourselves face to face with a system of theories which appears to leave all creatures, high and low alike, in a world without a God, either as a Creator at the first, or as still ruling over all by His superintending providence. Need I

say that these theories, thus carried out, strike absolutely at the root of all revelation, and, therefore, at all the aspirations and hopes of man, either for time or for eternity.

Cowper sketches a somewhat similar but perhaps less advanced class of scientific theorists of his day so well, that I must quote part of his description here, as his bold declaration of the opposing truth applies to all, doubtless, of every kind and degree :—

“ Some say that, in the origin of things,
 When all creation started into birth,
 The infant elements received a law,
 From which they swerve not since.

 Thus dream they, and contrive to save a God,

 The Lord of all, Himself through all diffused,
 Sustains, and is the life of all that lives;
 Nature is but a name for an effect
 Whose cause is God.”

As a believer in the Holy Scriptures as the inspired and revealed word and will of God to man, I agree with what our old President, Professor Fleming, D.D., said long ago, but which is still as true now as when it was written :—

“ Without controversy, the works and the words of God must give consistent indications of His government, provided they be interpreted truly. The talent, sagacity, learning, and industry occupied for ages with the Book of Revelation have produced a mass of evidence by which its *moral authority* has been established. But unfortunately for the interpreters of the Book of Nature, they have been few in number, their field of observation too limited, and their prejudices too obvious to permit any high value to be attached to their theoretical deductions.” . . .

Personally, I cannot put aside the most ancient history we possess of creation, as given us in the books of Moses, which have, I believe, been intended for the information of the human race in every state of civilisation, and in every land, though I may not be able to understand or explain it in all its details. Indeed, I do not expect or ask to understand the deep mysteries of the creation, and all the relations of matter

and of life, or to be able to catalogue and classify the march and order of creation; except in a very general way indeed. There are truths, however, announced in this old account which I cannot but believe, viz.: the original creation of matter—the worlds—by the Almighty Maker; a progress of creation, after light and order had been evolved from an apparent state of disorder; the sequence or succession of vegetable and animal life, each in its turn declared by its Creator to be perfect, “good, very good;” and the special circumstances mentioned at the creation of man sufficiently mark him out, to my mind at least, however closely allied his physical frame may be to the lower animals, as a creature very different indeed from them.

Then let me remind you that the Bible history of man is not one of development by slow degrees in the course of untold ages, from a state of degradation allied to the brute creation. On the contrary, we are told that man was created at the first upright, and lord of all the lower creation. From this state he soon fell, but doubtless he still retained at least his lordship over the creatures, and very early took some of them specially under his protecting care; one of the first family being, we are told, a keeper of domesticated cattle. It would almost appear, as, indeed, I have elsewhere stated, as if the Creator had stamped a peculiarly plastic or mobile character on the whole group of these very domestic animals which man has brought under his sway, to suit them, shall I say, in their varied descendants, under man’s superintending care, for accompanying him as he spreads abroad over almost all the regions of the earth. It is this very peculiarity, indeed, which has been taken by some learned writers to attempt to prove the mobile characters, not of these domesticated animals alone, but of the whole animal kingdom. The after-history of the human race, instead of being one of regular progress and advancement, seems rather to have been one of fall and degradation; again of rise and progress, at least in some of its branches; and again of fall and degradation, followed again by rise and progress; the modern barbarism thus covering in some places and concealing the older civilisation. But into this wide though tempting subject I cannot at present enter; only I

believe, as we are told in Scripture,—“Righteousness exalteth a nation,” and that we have here the preserving salt, the possession of which alone will in the end prevent a nation from relapsing again into barbarism. . . . Truths such as these taught so plainly in Holy Scripture, bearing on the relation of all living creatures, and the world itself, to their Great Creator, have, to me, at least, a sublimity, a beauty, an order, a fulness, adapted to the nature of man, infinitely surpassing any or all of the theories of the sad, struggling, and evolving creation of man’s devising.

And now, gentlemen, a word in conclusion on the present state and prospects of our Society itself. I have already said we are still fortunate enough to have among us some of our old Presidents, men like Mr C. W. Peach, who can enlighten and charm us on many branches of Natural History; James M’Bain, M.D., R.N.; Professor John Duus, D.D.; Mr R. F. Logan; Dr Stevenson Macadam; also Dr Traquair, Mr Andrew Taylor, Mr Robert Gray, and many others, whose names occur to us all, and are amply sufficient to show what power and energy still remain in this old Society, now entering on the one hundred and sixth year of its age. I am sure, by the active support of our Members bringing everything of interest under our notice that may come in their way, the Society, led by the well-known naturalists among our office-bearers, and by the accomplished men whom the Council expect to fill the vacant places among our officials, the Royal Physical Society will hold on the even tenor of its quiet pleasant way, with perhaps greater vigour and activity, zeal and success, than before; in the examination and pursuit of all the varied branches of Natural, ay, Physical Science; for the old and happy name and constitution of our Society makes it right and proper to include among its workers all the lovers and cultivators of the many branches of science.

And now, gentlemen, in leaving this chair, it falls to me to resign my office of President, the term of which has now come to a close. You were good enough to appoint me one of your Presidents, when failing health and strength admonished me to retire from the office of the Secretary, which I

had the honour and the pleasure to fill for so many years. Unfortunately, however, I could not but feel that this state of matters by no means fitted me the better for filling the more prominent and important office of the President; and in now resigning that office, I have warmly to thank my fellow office-bearers for their constant courtesy and kindness to myself, and, indeed, gentlemen, my hearty thanks are due to all the Members of the Society, in these by-past years, for the invariably pleasant intercourse I have had with them on all and every occasion.

On the motion of Professor DUNS, D.D., a vote of thanks was unanimously awarded to Dr Smith for his able address, and for his valuable services while President of the Society.

II. *Ornithological Notes*: (1.) *Buteo lagopus*, *Rough-legged Buzzard*; (2.) *Pernis apivorus*, *Honey Buzzard*; (3.) *Otus brachyotos*, *Short-eared Owl*; (4.) *Lanius excubitor*, *Great Grey Shrike*; (5.) *Upupa epops*, *Hoopoe*; (6.) *Charadrius morinellus*, *Dotterel*. (Specimens exhibited.) By JOHN ALEXANDER SMITH, M.D.

(1.) *Buteo lagopus*, *Rough-legged Buzzard*.—This fine female specimen of this bird was shot near Roslin on the 23d October.

(2.) *Pernis apivorus*, *Honey Buzzard*.—This bird is also a female, and its plumage is remarkably dark in colour. It was shot near Pencaitland, Haddingtonshire, on the 22d September last. Another fine specimen of this bird was shot last year on the 20th September at Kilberry, Argyleshire. It was an adult male, and its stomach on being opened was found to be filled with full-grown specimens of the common wasp.

(3.) *Otus brachyotos*, *Short-eared Owl*.—Various specimens were exhibited; this bird having been recently unusually common this season in various parts of Scotland, the native birds being probably supplemented by many from the Continent, owing to the great prevalence of easterly gales.

(4.) *Lanius excubitor*, Great Grey Shrike.—A male specimen of this occasional visitor. It was shot by one of the Duke of Buccleuch's keepers, on the 9th of March, at Bowhill, Selkirkshire.

(5.) *Upupa epops*, Hoopoe.—A fine male bird, and rare visitor, was killed at Burntisland, Fife, on the 25th April of this year. The specimen exhibited, was purchased, on the 6th October, by Mr Stavert, 18 Royal Terrace, from a railway surface-man at the Innerwick station (Haddingtonshire) of the North British Railway, who had recently caught it there alive, and it was brought by Mr Stavert alive to Mr William Hope, taxidermist, George Street. The bird was a female.

(6.) *Charadrius morinellus*, Dotterel.—Two young males and two females, also young birds. These birds were brought to Mr William Hope, taxidermist; they had been shot at Dalnaspidal, Perthshire, on the 17th August; also a female, shot in the same neighbourhood, on the 8th September 1876. Other birds of the same kind had been noticed on the tops of the hills of this high district for several years past, about the same time of the year, but the species had not before been determined. The bird is one of our local summer visitors, and its rare breeding-places occur only on the very tops of high mountains. Mr T. C. Heysham first described their breeding-places near Carlisle, in Cumberland, and Westmoreland; and Mr Robert Gray, in his valuable "Birds of the West of Scotland," has gathered together for us, various notices of its rare occurrence and supposed breeding-places; in Sutherlandshire, Inverness-shire, Aberdeenshire, and the adjoining counties, and also in Dumfriesshire; they appear, however, to occur only in small flocks; and some of these localities may perhaps need further confirmation. This, then, appears to be an addition to the localities where these birds have been observed; and from the time of the year when they were killed, and the immature state of the plumage of some of them, it may, probably, be considered an addition also to the breeding-places of these very locally-distributed birds. I may mention that two of these specimens were secured for our "Museum of Science and Art;" another pair by Mr

Robert Gray, for his own collection ; and a single bird for the Berwick Museum.

(I have to thank Mr. William Hope, taxidermist, George Street, for enabling me to examine and exhibit these specimens, and the Hoopoe, Shrike, etc.; and also Mr Small, taxidermist, George Street, for being able to bring some of the other birds under the notice of the Society.)



